

Marine Toxins and Associated Syndromes

Syndrome/toxins	Dinoflagellates/Diatoms	Exposure(s)	Range of symptoms	Incubation Period
Paralytic Shellfish Poisoning (PSP) -saxitoxins	<i>Alexandrium</i> spp., <i>Gymnodinium catenatum</i> , <i>Pyrodinium bahemense</i> (dinoflagellate)	Shellfish	<ul style="list-style-type: none"> ▪ Perioral tingling ▪ Numbness of face and neck ▪ Headache ▪ Nausea and vomiting ▪ Respiratory difficulty ▪ Death 	30 min – 3 hrs.
Diarrhetic Shellfish Poisoning (DSP) -Okadaic acid and derivatives	<i>Dinophysis</i> spp. <i>Prorocentrum</i> spp. (dinoflagellate)	Shellfish	<ul style="list-style-type: none"> ▪ Diarrhea (most prominent) ▪ Nausea and vomiting ▪ Abdominal pain 	30 min – 2 hrs
Ciguatera Fish Poisoning (CSP) -Ciguatoxins, maitotoxin	<i>Gambierdiscus toxicus</i> , <i>Prorocentrum</i> spp. (dinoflagellate)	Reef fish	Early onset <ul style="list-style-type: none"> ▪ Diarrhea ▪ Nausea and vomiting Later onset <ul style="list-style-type: none"> ▪ Reversal of hot and cold sensations ▪ Paresthesias ▪ Blurred vision ▪ Headache ▪ Arrhythmias ▪ Paralysis 	2 – 6 hrs
Neurotoxic Shellfish Poisoning (NSP) -brevetoxin	<i>Karenia brevis</i> (dinoflagellate)	Shellfish Inhalation of aerosolized toxins	GI and neuro symptoms <ul style="list-style-type: none"> ▪ Similar to those of PSP except NSP not known to cause death Respiratory irritation <ul style="list-style-type: none"> ▪ Burning throat ▪ Conjunctivitis ▪ Non-productive cough 	Few min - hours
Amnesiac Shellfish Poisoning (ASP) -Domoic acid	<i>Pseudo-nitzschia</i> spp. (diatom)	Shellfish	<ul style="list-style-type: none"> ▪ Diarrhea ▪ Nausea and vomiting ▪ Confusion ▪ Memory loss ▪ Seizures ▪ Coma ▪ Death 	24 – 48 hrs